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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,237	09/26/2003	Kiyoshi Nakagawa	1035-470	8584

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ARLINGTON, VA 22203

EXAMINER
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NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/670,237

Applicant(s)

NAKAGAWA ET AL.

Examiner

Kimnhung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This application has been examined. The claims 1-7 are pending. The examination results are as following.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless—

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Kudo et al. (US 7,023,458).

As to claim 1, Kudo et al. discloses in fig. 3, a display apparatus of semi-transmissive type for performing both reflective display and transmissive display (because any arrangement of the display apparatus having an advance the potential of the data and scanning signals for reflective display and the potential of the of the data and scanning for the transmissive display), a display mode of the reflective display and a display mode of the transmissive display being different in relationship between an applied voltage and transmissivity or relationship between the applied voltage and reflectivity (and therefore, the intensity of light of each grayscale (gradation levels) is different in both transmissive display mode and reflective display mode, display apparatus comprising:

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gradation reference (316) potential generating means including two series of two variable resistors (322,324) and a ladder resistor (326) located between the two variable resistors, the ladder resistor (326) outputting gradation reference potentials of a required number of gradation levels (because Kudo et al. discloses a reference voltage 316 for generating voltages of gray scale levels, variable resistors 321 to 324 and resistive voltage division circuits 326 to 331 (or ladders 326-331), thus all of them including ladder (326) setting in a micro adjustment 306 and an output unit resistance ladder (315) for dividing the output voltage with resistance divided of the amplifier circuit (314) into a desired number of gray scale levels of voltages, therefore, the ladder resistor 326 is indirected to serve to output gradation reference potentials of a required number of gradation levels as claim (see col. 7, lines 44-58), each of the series dividing a power source voltage (see grayscale voltage generating circuit 302, see col. 7, lines 44-49).

the gradation reference (316) potential generating means including a memory (see control register 301 constitutes an amplitude adjustment register 304, and a gradient adjustment register 305, see col. 7, lines 38-53) and for storing therein resistance value setting data for each display mode, the resistance value setting data being for setting resistance values of the variable resistors (see the lower variable resistance 321 set in the amplitude adjustment register 304, and the lower-middle variable 322 set in the gradient adjustment register 305, see col. 7, lines 60-67 and col. 8, lines 19-27 for details of the explanation).

As to claim 2, Kudo et al. discloses an inherent that the memory (control register 301) is non-volatile (because Kudo et al. discloses the values in the control register 301 may also be stored in a non-volatile memory (see col. 7, lines 41-42), and control register 301 is constituted by amplitude adjustment register 304, and a gradient adjustment register 305, see col. 7, lines 38-

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53, and storing the resistance values and discussed in claim 1, therefore the resistance values also are stored in a non-volatile memory).

As to claim 3, Kudo et al. discloses further an inherent the two ladders resistors respectively generate a positive gradation reference potential and a negative gradation reference potential (see background of the invention, see col. 1, lines 52-60).

As to claim 4, Kudo et al. discloses in fig. 3, a display apparatus of semi-transmission semi-transmissive type for performing both reflective display and transmissive display (because any arrangement of the display apparatus having an advance the potential of the data and scanning signals for reflective display and the potential of the of the data and scanning for the transmissive display), a display mode of the reflective display and a display mode of the transmissive display being different in relationship between an applied voltage and transmissivity or relationship between the applied voltage and reflectivity (and therefore, the intensity of light of each grayscale (gradation levels) is different in both transmissive display mode and reflective display mode, display apparatus comprising:

gradation reference potential generating means including a group of output terminals whose voltages are determined in accordance with a voltage division ratio of one ladder resistor, so as to output gradation reference potentials of a number (64 grayscale voltages, fig. 3) greater than a required number (16) of gradation;

output terminal designating means including a memory (see control register 301 constitutes an amplitude adjustment register 304, and a gradient adjustment register 305, see col. 7, lines 38-53) for designating, among from the output terminal, an output terminal for each of the gradation of the required number, in accordance with the display modes; and

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selecting means (selector circuits 308-313) for selecting an output terminal that corresponds to an input gradation signal, among from the output terminals designated by the output terminal designating means, and for applying a voltage via the thus selected output terminal to a display screen (see col.7, lines 44-58 for details of the explanation).

As to claim 5, claim 5 depends on the claim 4 and is rejected on the same reasons of claim 4. Further, Kudo et al. discloses the memory is non-volatile (see col. 7, lines 41-42), and stores therein resistance value setting data for each display mode; the resistance value setting data being for setting resistance values of the variable resistors (see control register 301 constitutes an amplitude adjustment register 304, and a gradient adjustment register 305, see col. 7, lines 38-53) and for storing therein resistance value setting data for each display mode, the resistance value setting data being for setting resistance values of the variable resistors (see the lower variable resistance 321 set in the amplitude adjustment register 304, and the lower-middle variable 322 set in the gradient adjustment register 305, see col. 7, lines 60-67 and col. 8, lines 19-27 for details of the explanation).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kudo et al. (US 7,023,458).

Kudo et al. discloses the gradation reference potential generating means (316, fig. 3) includes a group of output terminals (output unit resistance 315 having multiple output through the amplifier circuit 314, fig. 3, see col. 7, lines 55-58) for outputting gradation reference potentials of an N multiple of a number of gradation ( $N=64$ ). However, Kudo does not disclose that the output terminals for outputting gradation reference potentials of an N multiple of a required number of gradations, where N is an integer not less than 2.

It would be obvious for Kudo et al.'s display to have the output terminals for outputting gradation reference potentials of an N multiple a required number of required number of gradations, where N is an integer not less than 2 as claimed since such a modification would have involved a mere change in the size/range of the number. A change in size/range is generally recognized as being within the level of ordinary skill in the art.

See In re Rose, 105 USPQ 237 (CCPA 1995),

See In re Reven, 156, USPQ 679 (CCPA 1968).

#### ***Allowable Subject Matter***

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: None of the cited art teaches or suggests that the resistance value setting data being for setting resistance values of the variable resistors so that when the display is in the transmissive display mode the variable resistors are set using a first set of values, but when the display is in the reflective display mode the variable resistors are set using a different second set of values.

***Response To Arguments***

7. Applicant's arguments with respect to claims 1-7 filed on 11/3/06 have been considered but they are not persuasive.

Applicant states that "Kudo in fig. 3 teaches a set of resistors 322,324 and a resistance ladder 326 therebetween. However, in Kudo, the ladder resistor 326 between the two variable resistors does not serve to output gradation reference potentials of a required by claim 1. Instead, the ladder resistor 326 in Kudo apparently serve to output reference voltages of another separate resistor. Because the ladder resistor 326 in Kudo does not output gradation reference potentials of a required number of gradation levels, it cannot be the ladder resistor required by claim 1".

"It is noted the output section resistance ladder 315, while outputting a desired number of gray scale levels of voltages (e.g., col. 7, lines 55-59), is not located between two variable resistors and thus also unrelated to the invention of claim 1".

Examiner respectfully disagrees because (because Kudo et al. discloses a reference voltage 316 for generating voltages of gray scale levels, variable resistors 321 to 324 and resistive voltage division circuits 326 to 331(or ladders 326-331), thus all of them including ladder (326) setting in a micro adjustment 306 and an output unit resistance ladder (315) for dividing the output voltage with resistance divided of the amplifier circuit (314) into a desired number of gray scale levels of voltages, therefore, the ladder resistor 326 is indirected to serve to output gradation reference potentials of a required number of gradation levels as claim (see col. 7, lines 44-58). For these reasons, the rejections are maintained.



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7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

#### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number is (571) 272-7698. The examiner can normally be reached on MON-FRI, FROM 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimnhung Nguyen

Patent Examiner

January 8, 2007



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